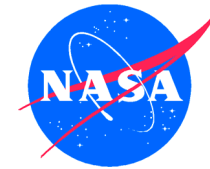


From Shuttles to Plasma Displays: MSI Reaps NASA Materials Expertise

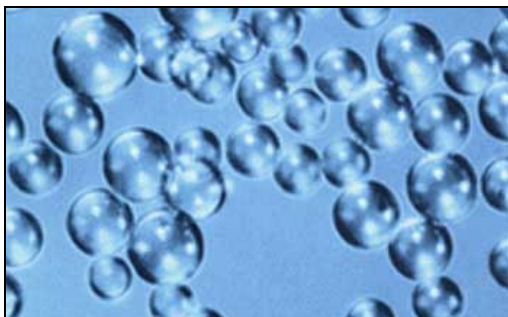


TECHNOLOGY

NASA Glenn's intimate knowledge of the optical properties of glass chemistries, chemical interactions in ceramics, and glass processing parameters was originally developed under the strict demands of the space program.

COMMERCIAL APPLICATION

Microsphere Systems, Inc. (MSI) develops hollow glass micro-sized spheres, or "microspheres," that can contain gasses. Microspheres are the key component for a plasma display panel that can be shaped without image distortion. MSI's challenge lay in preventing severe microsphere discoloration during high-temperature fabrication. MSI turned to the Garrett Morgan Commercialization Initiative (GMCI) to learn about possible NASA technology solutions. GMCI assembled key experts in advanced metallics, ceramics, and glass from the NASA Glenn Research Center and The Ohio State University for a brainstorming session. The team concluded that MSI needed a new design approach that made use of ceramic surfaces in contact with the glass, and suggested the use of a phosphate glass composition for UV transparency.



Glass microspheres, the enabling component of a novel plasma display panel, are being targeted for use in military, medical, and consumer applications.

SOCIAL/ECONOMIC BENEFIT

NASA's invaluable advice to use a ceramic coating as a relatively inexpensive alternative to expensive high performance metals such as platinum yielded immediate results to successfully complete a research program for the National Science Foundation. In addition, MSI moved into the market by supplying a potential customer with samples of microspheres for high performance insulations.

NASA APPLICATIONS

The NASA Glenn Research Center develops many high performance advanced metallic and ceramic materials for the space program. These materials are used in the engines of rockets and high performance aircraft because they can withstand harsh environments, extreme temperatures, and repetitive cycling. NASA's materials provide enhanced safety to passengers on these aircraft due to their strength and durability.

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